I was sceptical - but it works!

Get a socket, heater transformer, milliammeter, a variable DC supply 0-40V and a cooling fan (a muffin fan will do).

Connect the filament, connect the grid to the anode (yes, the anode) and apply DC supply (+ve) to the anode+grid and -ve to filament (either side will do). Put the fan on to stop the tube seals from over heating.

Set the DC voltage to around 35V and see if any current flows - there's a good chance that you'll see no significant currently flow (perhaps a few tens of uA)...

Now, leave your fixture on for several hours to 'cook'. This can take several tens of hours... eventually you should see the some signs of current flow - the meter may flick up to 10-50mA now and then... this is the Thorium migrating back to the surface of the heater and starting to emit electrons.

After several more hours it should settle down and you should be able to get around 400mA of anode current with just 40V DC on the anode (remember that you've got the grid tied up to the anode, so you really have a big diode at this point). At this point the power dissipation is 40V DC 400mA => 16 watts.

Now if you adjust the anode voltage up and down the lower voltage at which you can achieve 400mA anode current the better the tube.

Until you've checked out your tubes and got them emitting electrons there's not much point in worrying about gettering them ;-)

Now, the getter in the 3-500Z is a coating painted on to the outside of the anode. The getter only works when the tube's anode is hot (glowing dull red/orange), for this you need to be dissipating approx. 300-400W.

I gettered my reclaimed tubes with a 1200V DC supply, 1A anode meter (1A fuse in series) and a DC supply. You need to get the tube to draw around 250-300mA and to do this you need positive DC on the grid - I used a 20V DC bench supply.

You need the tube in a proper fixture with plenty of cooling and then to cook it for a period of a couple of hours.

After re-activating and re-gettering several tubes that were given to be as 'soft' and unsable I have one in my homebrew 6m amp (QST 1971 design) and two in my TL922. The 6m amp will give over 800W out for 35-40W drive... not bad for a "useless" tube (according to its previous owner).

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